Federal Aviation Administration

Record of Decision for Streamlining the Processing of Experimental Permit Applications

October 15, 2009

Federal Aviation Administration

Office of Commercial Space Transportation

RECORD OF DECISION

Streamlining the Processing of Experimental Permit Applications

Introduction and Background

The Federal Aviation Administration's (FAA) Office of Commercial Space Transportation prepared this Record of Decision (ROD) in order to document the FAA's final approval for streamlining the environmental review of experimental permit applications for the launch and/or reentry of reusable suborbital rockets. The Federal action selected in this ROD is the FAA's issuance of experimental permits for the launch and reentry of reusable suborbital rockets from both FAA-licensed and non-licensed launch sites using the Final Programmatic Environmental Impact Statement for Streamlining the Processing of Experimental Permit Applications (PEIS), to the maximum extent feasible, as the basis for determining the environmental consequences of issuing the permits.

The FAA prepared the PEIS with cooperation from the National Aeronautics and Space Administration (NASA) and the U.S. Air Force. The PEIS documents the analysis of the environmental consequences associated with the above referenced Proposed Action and a No Action Alternative and is made part of this ROD. The PEIS was prepared pursuant to the requirements of the National Environmental Policy Act (NEPA) of 1969 as amended (42 U.S.C. 4321, et seq.), the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508), and FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures,* dated June 8, 2004.

For more information concerning the contents of this ROD or the PEIS please contact:

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Project Purpose and Need

The purpose of the Proposed Action is to facilitate the issuance of experimental permits for the launch and/or reentry of reusable suborbital rockets by streamlining the environmental review portion of the application. Future environmental documents that are able to tier from the PEIS would benefit through the elimination of the repetitive

discussions of recurring issues and, when necessary, could focus on any unaddressed impacts or issues ready for decision. In addition, the Proposed Action would further the mission of the FAA to promote the growth of the U.S. space transportation industry while protecting public health and safety, the safety of property, and U.S. national security and foreign policy interests.

The need for the Proposed Action results from the statutory direction from Congress in the Commercial Space Launch Amendments Act of 2004 (CSLAA) to FAA to facilitate commercial rocket developers' research and development associated with testing new design concepts, new equipment, or new operating techniques; compliance with requirements; and training of flight crews. Facilitating the issuance of experimental permits implements the direction and intent Congress provided with the CSLAA. In addition, the need for the Proposed Action is to aid the permitting process in meeting the 120-day deadline Congress imposed under the CSLAA.

Public and Agency Involvement

Public participation in the NEPA process promotes better decision-making and provides for and encourages open communication between the FAA and the public. Scoping for the development of the PEIS began with the publication of the Notice of Intent in the Federal Register on March 27, 2006 (71 FR 15251). During scoping, the FAA invited the participation of Federal, state, and local agencies, Native American tribes, environmental groups, citizens, and other interested parties to assist in determining the scope and significant issues to be evaluated in the PEIS. Scoping was extended through June 2, 2006, with the publication of a Notice of Extension of Scoping for the PEIS in the Federal Register on May 9, 2006 (71 FR 27023).

Public review and comment on the Draft PEIS was initiated with the publication of the Environmental Protection Agency's Notice of Availability in the Federal Register on April 10, 2009 (74 FR 16439). The FAA distributed approximately 670 copies of the Draft PEIS to elected officials, Federal agencies, Native American tribes, state agencies, county agencies, local agencies, organizations, and members of the public who requested copies of the document. Copies of the Draft PEIS were made available for review in 14 public libraries near the eight launch sites evaluated in the PEIS. The PEIS was also made available on FAA's website (*http://ast.faa.gov*).

The public review and comment period lasted 45 days, ending on May 25, 2009. Comments received after the end-date of May 25 were still considered in preparation of the Final PEIS. Sixteen comment documents were received on the Draft PEIS from Federal, state, and local agencies, one organization, and one private citizen. Several of the comments sought clarification of potential impacts to threatened and endangered species at some of the eight launch sites analyzed in detail in the PEIS. Other comments corrected factual errors in the Draft PEIS. The FAA responded to all substantive comments and included in the Final PEIS any necessary changes or edits resulting from the comments received. These comments, as well as the FAA's responses to these comments, are contained in Appendix E of the Final PEIS. The FAA is issuing this ROD no sooner than 30 days after publication of the Final EIS in accordance with CEQ NEPA implementing regulations (40 CFR 1500-1508).

Overview of the Proposed Action and Alternatives in the Final PEIS

The Proposed Action and Alternatives considered are described in detail in Chapter 2 of the PEIS; and they are summarized in this ROD. As noted earlier, this ROD provides the FAA's final approval to implement a process for streamlining the environmental review of experimental permit applications.

Proposed Action – Preferred Alternative

The Final PEIS analyzed a Proposed Action, which was the FAA's Preferred Alternative, under which the FAA would issue experimental permits for the launch and reentry of reusable suborbital rockets from both FAA-licensed and non-licensed launch sites using the PEIS to the maximum extent possible as the basis for determining the environmental consequences of issuing the permits. Because the PEIS presents information and analyses common to all reusable suborbital rockets, the FAA could choose to tier future environmental documents from the PEIS to focus on environmental impacts specific to an applicant's proposed operations under an experimental permit. The scope of the PEIS does not include construction activities and assumes the use of existing launch support infrastructure. Consequently, any proposed construction activities (*e.g.*, repair or modification of existing infrastructure or development of new infrastructure) would be addressed in separate site-specific environmental documentation, as appropriate. Tiering from the PEIS would eliminate repetitive discussions of recurring issues and focus on the issues ready for decision. So long as the activities analyzed in a tiered document are within the scope of the PEIS, the subsequent environmental impact analysis for the issuance of experimental permits need only summarize the issues discussed in the PEIS, incorporate discussions from the PEIS by reference, and concentrate on the impacts specific to each experimental permit.

Under the Proposed Action, the activities associated with an experimental permit could occur from any location that has the appropriate infrastructure and safety requirements in place to support a reusable suborbital rocket launch and reentry. While most FAA-license launch activities would occur at Federal spaceports, future launch and landing activities could originate from spaceports operated by private entities or state and local governments. The potential site-specific impacts of permitted launches were evaluated in detail for seven FAA-licensed commercial launch sites: California Spaceport, California; Mojave Air and Space Port, California; Kodiak Launch Complex, Alaska; Mid-Atlantic Regional Spaceport, Virginia; Space Florida Launch Complex-46 at Cape Canaveral Air Force Station, Florida; Oklahoma Spaceport, Oklahoma; Spaceport America, New Mexico; and one Federal range, the Shuttle Landing Facility at John F. Kennedy Space Center, Florida.

The number of launches and the flight profiles of launches will likely vary by individual launch site. As such, the numbers of launches per year presented in the PEIS are extremely conservative estimates and the actual number of launches per year would likely be lower, depending on rocket development and the number of operators that propose to use each individual site. In addition, the maximum number of events for specific sites could be lower if a particular site cannot support all of the flight profiles identified in the PEIS.

As new applications for experimental permits for the launch and/or reentry of a reusable suborbital rockets are received, FAA would consult with the applicant and determine the type of environmental document that must be prepared in accordance with NEPA and FAA Order 1050.1E requirements. In order to do this, the FAA would complete a NEPA checklist (see Appendix A of the PEIS) to examine each permit application in relation to the analyses in the PEIS. If the applicant's proposed launch activities were addressed in the PEIS as well as their potential environmental impacts, the FAA would document those findings in the NEPA checklist. For example, if the proposed launch site was one that required no further site-specific consultations or analyses for such sensitive resources as endangered species, marine mammals, or Section 4(f) resources, the likely outcome would be that the NEPA analysis in the PEIS would suffice for the permit application and no duplication of effort or paperwork would occur. In such a case, the FAA would conclude its NEPA review by executing the NEPA Checklist. Consequently, this example application review case would tier from the PEIS for NEPA compliance purposes.

Whenever the FAA cannot, through the completion of the NEPA Checklist, conclude that no further NEPA document is required, the appropriate NEPA document, an EA or an EIS, would be prepared in accordance with FAA Order 1050.1E. However, that NEPA document would focus only on the proposed activity, resource area(s), and impact(s) not addressed in the PEIS. This focused approach would again avoid both a duplication of effort and effectively streamline the NEPA compliance process for the FAA and the applicant. As further indicated in the PEIS, the FAA could change the content of the checklist over time based on its experience with completing it, but would not eliminate its coverage of any currently listed resource areas. If an applicant proposes to launch from a site not evaluated in the PEIS, the FAA would develop an EA or EIS that partially tiers from the PEIS. The impacts that would most likely accommodate some degree of tiering would include those that apply generally to all potential launch sites.

For applicants proposing to launch from one of the eight sites evaluated in detail in the PEIS, the FAA could develop an environmental document that entirely or partially tiers from and incorporates the findings of the PEIS. Similarly, if the applicant proposes to use one of the eight launch sites covered in the PEIS but that site either needs (1) continuing consultation with a federal consulting agency because of the nearby presence of a sensitive resource such as an endangered species or a marine mammal, or (2) a site-specific Section 4(f) determination, the FAA would undertake the consultation or complete the determination. Any "no effect" finding from the completed consultation(s) or a FAA no effect, *de minimis* effect, or no substantial impairment determination for Section 4(f) compliance purposes would be documented in the NEPA Checklist. If no additional analyses were needed, the FAA would execute the NEPA Checklist and conclude the NEPA compliance process for the covered permit application with no resulting need to prepare either an EA or an EIS.

No Action Alternative

The Final PEIS also analyzed a No Action Alternative, under which the FAA would continue issuing experimental permits for the launch and reentry of reusable suborbital rockets using its present system of analyzing environmental consequences on a case-by-case basis without tiering from a programmatic document. The information and analyses

provided in the PEIS would not be used to facilitate the preparation of environmental documents for the issuance of experimental permits to individual rocket operators. Under the current permitting process, then, the information contained in the PEIS would not be used to eliminate repetitive discussion of recurring issues, and would not focus subsequent environmental analysis on the actual issues that are ready for decision. This would result in increased paperwork, duplication, and time needed to develop future site-specific and project-specific analyses when compared to the Proposed Action.

Environmentally Preferable Alternative

The Proposed Action is the Environmentally Preferable Alternative. Under both the Proposed Action and the No Action Alternative, the FAA would continue issuing experimental permits for the launch and reentry of reusable suborbital rockets. As a result, the nature and extent of impacts associated with the No Action Alternative would fall within the envelope of impacts described for the Proposed Action. Under the No Action Alternative, however, when the FAA received an application for an experimental permit, the FAA would develop a separate site-specific NEPA document to evaluate the potential impacts and would not use the information analyses provided in the PEIS. This would result in increased paperwork, duplication of effort, and time needed to develop site-specific and project-specific analyses, compared to the Proposed Action.

Environmental Impacts under the Proposed Action

The environmental impacts analysis was based on the following activities associated with the issuance of experimental permits for the launch and reentry of reusable suborbital rockets: pre-flight activities, including those performed to prepare a reusable suborbital rocket for launch, beginning with its arrival at the point of launch; takeoff, flight, and landing activities, include those performed from engine ignition to landing; and post-flight activities, include vehicle and equipment recovery (*e.g.*, parachute recovery) and vehicle safing (*i.e.*, ensuring that the vehicle is stable and presents no public hazards during recovery). Chapter 4 of the PEIS describes the general impacts applicable to all potential launch sites and the potential site-specific impacts for the eight launch and landing locations. A brief summary of the impacts is presented here.

Air Quality

Emissions generated from reusable suborbital rockets could include releases of chemicals such as hydrogen chloride, chloride, particulate matter, nitrogen oxide, sulfur oxide, carbon monoxide, carbon dioxide, water (in stratosphere), hydrogen ions (in the ionosphere), and volatile organic compounds. Emissions from reusable suborbital rockets on or near the ground would be of very short duration and would rapidly disperse. Ambient pollutant concentrations at locations accessible to the public would be low and would not be expected to result in violations of any National Ambient Air Quality Standards or state standards. Emissions of ozone-depleting substances and greenhouse gases would be negligible.

Biological Resources (Fish, Wildlife, and Plants)

Wildlife and vegetation in the vicinity of a launch site could experience direct, but minor and temporary adverse impacts. The launch and landing of reusable suborbital rockets in or near vegetated areas could result in adverse impacts through deposition of rocket engine emissions, exposure to exhaust heat, direct removal of vegetative communities, and noise associated with rocket launches. In addition, the Proposed Action could result in location- and species-specific adverse impacts to protected species and essential fish habitat. Federal- and/or state-protected species are present at seven of the eight launch sites studied in the PEIS (with the exception of Oklahoma Spaceport). As new applications are received for the use of these seven sites, the FAA would coordinate with the launch site operator regarding the need to further consult with the appropriate agencies regarding any applicable requirements for Federal- and/or state-listed protected species and habitat. If potential impacts were to be identified, the FAA would consult with the appropriate agencies to develop any mitigation measures that may be warranted, as described in Chapter 5 of the PEIS.

Historical, Architectural, Archaeological, and Cultural Resources

Operating reusable suborbital rockets would not be expected to have a significant impact on cultural resources. Such activities would not likely result in ground-disturbing activities that would directly affect the integrity of below-ground (archaeological) resources eligible or listed on the *National Register of Historic Places.* The character or setting of historic properties could be affected by the operation of reusable suborbital rockets in area where such activities have not previously or routinely been operated. In particular, launching of vehicles at Spaceport America would result in moderate visual and noise effects to the settings of the El Camino Real National Historic Trail and the Aleman Draw Historic District.

Floodplains

As no new permanent infrastructure would be constructed, and all temporary structures would be removed after a launch or reentry event, there would be no impacts on floodplains as a result of the Proposed Action.

Hazardous Materials, Pollution Prevention, and Solid Waste

The primary hazardous materials used under the Proposed Action would be propellants. Because activities associated with the Proposed Action would comply with all applicable Federal, state, and local regulations related to hazardous materials and hazardous waste, no significant impacts would be expected.

Health and Safety

For all applicants, the FAA would perform a safety review, including a hazard analysis, to ensure the operation of reusable suborbital rockets would not result in significant impacts on public health and safety. Propellants would be stored in accordance with Federal and state regulations and site-specific standard operating procedures, and would be handled by trained personnel. Propellant loading activities would not be expected to affect the health and safety of site personnel or the surrounding public.

Land Use (Section 4(f) Resources, Farmlands, Wild and Scenic Rivers, and Coastal Resources

The potential for land-use conflicts as a result of the Proposed Action would be remote as all key flight-safety events would occur over unpopulated or sparsely populated areas. As no new permanent facilities or infrastructure would be developed, no prime farmland would be lost, and there would be no physical taking of lands protected under Section 4(f). There may be a need to temporarily close recreational areas, such as Jalama Beach and Ocean Beach county parks near the California Spaceport, Merritt Island National Wildlife Refuge and Canaveral National Seashore near Kennedy Space Center, Fossil Beach and East Twin Lake near the Kodiak Launch Complex, or Chincoteague National Wildlife Refuge near the Mid-Atlantic Regional Spaceport, during launch activities. The potential need to close these areas is unknown at this time and would be based on the defined operating area and rocket type and size. Any potential future use of a Section 4(f) property would be identified at a minimum through the previously described checklist process, and, if necessary analyzed for compliance through the completion of an EA or EIS. There would likely be no impact on wild and scenic rivers or coastal resources.

Light Emissions and Visual Resources

Launches and reentries of reusable suborbital rockets would conform to the visual resource management policies and statutes of Federal, state, and local agencies and tribes. As a result, no significant impacts to aesthetics or visual resources would be expected.

Natural Resources and Energy Supply

Reusable suborbital rocket launch and reentry events would not result in notable changes to energy demands or consumption of other natural resources. The use of rocket propellants and jet fuel under the Proposed Action would not notably alter propellant or fuel supply and demand. As a result, minor impacts on natural resources and energy supplies would be expected.

Noise and Compatible Land Use

Noise impacts resulting from the Proposed Action are anticipated to be minor. For vertical launches, only noise-sensitive receptors within approximately 450 feet (vertical flights) or approximately 1,300 feet (hovering flights) of launch pads would experience significant impacts resulting from launch noise. Noise-sensitive receptors beyond these areas would not experience significant noise impacts. Noise levels for horizontal launches would be similar to existing noise levels due to jet aircraft activity at launch facilities, and the increase in the number of horizontal launches would not be expected to result in any significant increase in noise at launch sites with existing activity. Because

the reusable suborbital rocket operating area would be over unpopulated or sparsely populated areas, sonic booms would have minimal noise impacts. Landing noise would be the same or less than noise generated by takeoff of rocket launches.

Socioeconomic Impacts, Environmental Justice and Children's Environmental Health and Safety

Based on the small size of the staff working at the launch or reentry site and the short duration of launch events, demands on the local infrastructure would not result in a notable change over current conditions. Potential national socioeconomic impacts would include a small increase in research and funding for the commercial space industry and increased employment opportunities for skilled and professional workers. No large and adverse human health or environmental effects would disproportionately affect minority or low-income populations, because no such effects are associated with the Proposed Action. The Proposed Action would not disproportionately affect children, because the operating areas for suborbital rocket activity would be over unpopulated or sparsely populated areas.

Water Quality

Deposition material associated with rocket engine emissions could result in local adverse impacts to freshwater and marine systems. However, monitoring of local streams around active launch pads has not shown long-term effects on basic water chemistry. Site-specific spill prevention plans and requirements would minimize groundwater impacts.

Wetlands

The deposition of rocket engine emissions could result in local adverse impacts to wetland vegetation and wildlife, but impacts would not be significant. Under the Proposed Action, no wetlands would be filled or drained.

Accidents

Impacts from launch accidents near the launch pad would produce local air emissions, propellant spills, and potential safety impacts to people on site. Propellant emissions released would be essentially the same as during a normal flight, but would be concentrated near the accident site. Vegetation and local water bodies could be affected by heat and falling debris.

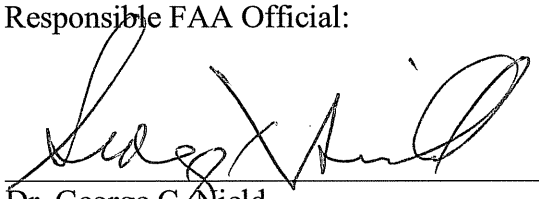
Mitigation Measures

The Final PEIS considered potential general or program-wide mitigation measures that could be implemented to prevent or reduce the environmental impacts of the activities considered in the PEIS. Because the activities evaluated in the PEIS have been maximized to develop an upper bound for potential impacts, the PEIS does not propose site-specific mitigation measures. However, launch operators would be expected to implement site-specific mitigation measures that are consistent with those currently employed by the eight launch facilities addressed in the PEIS. Additional site-specific mitigation measures could be developed and presented in the site-specific NEPA documents that would tier from the PEIS. The FAA would consult with the appropriate agencies to develop all mitigation measures.

Decision and Order

Based on the potential environmental impacts identified in the Final PEIS, applicable regulatory requirements, public and agency comments, and the FAA's responsibilities to support the continued growth and expansion of the U.S. space transportation industry, the FAA has decided to implement the Proposed Action (Preferred Alternative) as presented in the Final PEIS. Furthermore, I have carefully considered the FAA's goals and objectives in relation to streamlining the experimental permit process as discussed in the PEIS, including the purpose and need to be served, the alternative means of achieving them and the environmental impacts of these alternatives. Based upon the record of this proposed Federal action, and under the authority delegated to me by the Administrator of the FAA, I find that the action in this Record of Decision is reasonably supported.

Responsible FAA Official:



10/15/09

Dr. George C. Nield
Associate Administrator for
Commercial Space Transportation

Date